US Army Corps
of Engineers
HUNTSVILLE DIVISION

Defense Environmental Restoration Program
for
Formerly Used Defense Sites

Ordnance and Explosive Waste
Chemical Warfare Materials

ARCHIVES SEARCH REPORT

ORLANDO AAF
TOXIC GAS AND DECONTAMINATION YARD

Orlando, Florida
Orange County

Site No. I04FL039600

JULY 1993

Prepared by
US ARMY CORPS OF ENGINEERS
ST. LOUIS DISTRICT

ORDNANCE AND EXPLOSIVE WASTE
CHEMICAL WARFARE MATERIALS
ARCHIVES SEARCH REPORT

ORLANDO AAF TOXIC GAS AND DECONTAMINATION YARD

ORLANDO, FLORIDA
ORANGE COUNTY

DERP-FUDS NO. I04FL039600

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1.0 Introduction

1.1 Authority

In 1980, Congress enacted the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) 42 USC 9601 et seq. Ordnance and explosive wastes are included in the CERCLA definition of pollutants and contaminants that require a remedial response.

In 1983, the Environmental Restoration Defense Account (ERDA) was established by Public Law 98-212. This Congressionally directed fund was to be used for environmental restoration at Department of Defense (DOD) active installations and formerly used properties. The DOD designated the Army as the sole manager for environmental restoration at closed installations and formerly used properties. The Secretary of the Army assigned this mission to the Corps of Engineers (USACE) in 1984.

The 1986 Superfund Amendments and Reauthorization Act (SARA) amended certain aspects of CERCLA, some of which directly related to OEW contamination. Chapter 160 of the SARA established the Defense Environmental Restoration Program (DERP). One of the goals specified for the DERP is "correction of environmental damage (such as detection and disposal of unexploded ordnance) which creates an imminent and substantial endangerment to the public health or welfare or to the environment."

The DERP requires that a CERCLA response action be undertaken whenever such "imminent and substantial endangerment" is found at:

a. A facility or site that is owned by, leased to, or otherwise possessed by the United States and under the jurisdiction of the Secretary of Defense.

b. A facility or site that was under the jurisdiction of the Secretary of Defense and owned by, leased to, or otherwise possessed by the United States at the time of actions leading to contamination.

c. A vessel owned or operated by the Department of Defense.

The National Contingency Plan (NCP) was established by the Clean Water Act of 1972. The NCP has been revised and broadened several times since then. Its purpose is to provide the organizational structure and procedures for remedial actions to be taken in response to the presence of hazardous substances, pollutants, and contaminants at a site. Section 105 of the 1980 CERCLA states that the NCP shall apply to all response actions taken as a result of CERCLA requirements.

The March 1990 National Oil and Hazardous Substances Pollution Contingency Plan given in 40 CFR part 300 is the latest version of the NCP. Paragraph 300.120 states that "DOD will be the removal response authority with respect to incidents involving DOD military weapons

2.0 Previous site investigations

The two reports listed below have been prepared by the U.S. Army Corps of Engineers, Jacksonville District to establish this site as a Formerly Used Defense Sites (FUDS) under the Defense Environmental Restoration Program.

1. Findings and Determination of Eligibility, undated

2. Findings and Determination of Eligiblity, Orlando Military Air Field, 9 December 1985

No other engineering or environmental study reports were found for this site.

3.0 Site and site area description

3.1 Location

The former Orlando AAF Toxic Gas and Decontamination Yard was located east of Orlando in Orange County, Florida, as shown on Figure 3-1 and detailed on Map M-1.

3.2 Past uses

The exact uses of the 2100± acres of the Toxic Gas Yard land before acquisition by the DOD in World War II could not be established. Based on interpretation of a 1943 air photo it appears that the area was rural. Very few structures were constructed there and there were no evident crop farming or orchard operations. No visible improvements were present in the area where the ordnance bunkers and facilities were eventually constructed.

Permission was requested in July 1943 to acquire the land and construct the toxic gas yard. Construction was not undertaken until after August 1943, the time of the air photo. The Army eventually constructed ordnance storage igloos, a storage warehouse, latrines, bleachers, and a few smaller buildings on a portion real estate tract 51. A small arms firing range was developed in the southern area of this tract. Map M-3 show the toxic gas yard improvements, the pistol range, and the total extent of tract 51 overlaid on a 1990 air photo.

3.3 Current uses of site

The entire site is being utilized as an urban residential area with all of the normal appurtenant facilities, such as shopping areas, churches, schools, parks, and open areas. The portion used for the gas yard structures has been developed into a single family dwelling subdivision.

3.4 Demographics

3.4.1 Centers of activity

The project site is located approximately 7 miles east of the Orlando central business district. Part of the site lies within the city limits of Orlando, the remainder is in Orange County. The Naval Training Center which employs over 9,000 people is located northwest of the site.

3.4.2 Population density

According to 1990 census data Orlando, FL has a population density of 2,212 persons per

square mile.

ORLANDO	ORANGE COUNTY
AREA: 60.4 sq. mi.	AREA: 1,003.5 sq. mi.
POPULATION: 164,693	POPULATION: 701,292
POP. DENSITY: 2,212/sq. mi.	POP. DENSITY: 699/sq. mi.

3.4.3 Types of business

The predominant types of businesses in the area are service-related. A land use study broke up the types of land use in Orlando into the following categories: Office Space-33%, Commercial-25%, Hotel-4%,Industrial-10%, Government-17% and Hospital-9%.

3.4.4 Type of industry

Types of industry in the area are light industry including electronics, software publishing and health laboratories. Manufacturing of all types make up only 7% of the Orlando job market.

3.4.5 Type of housing

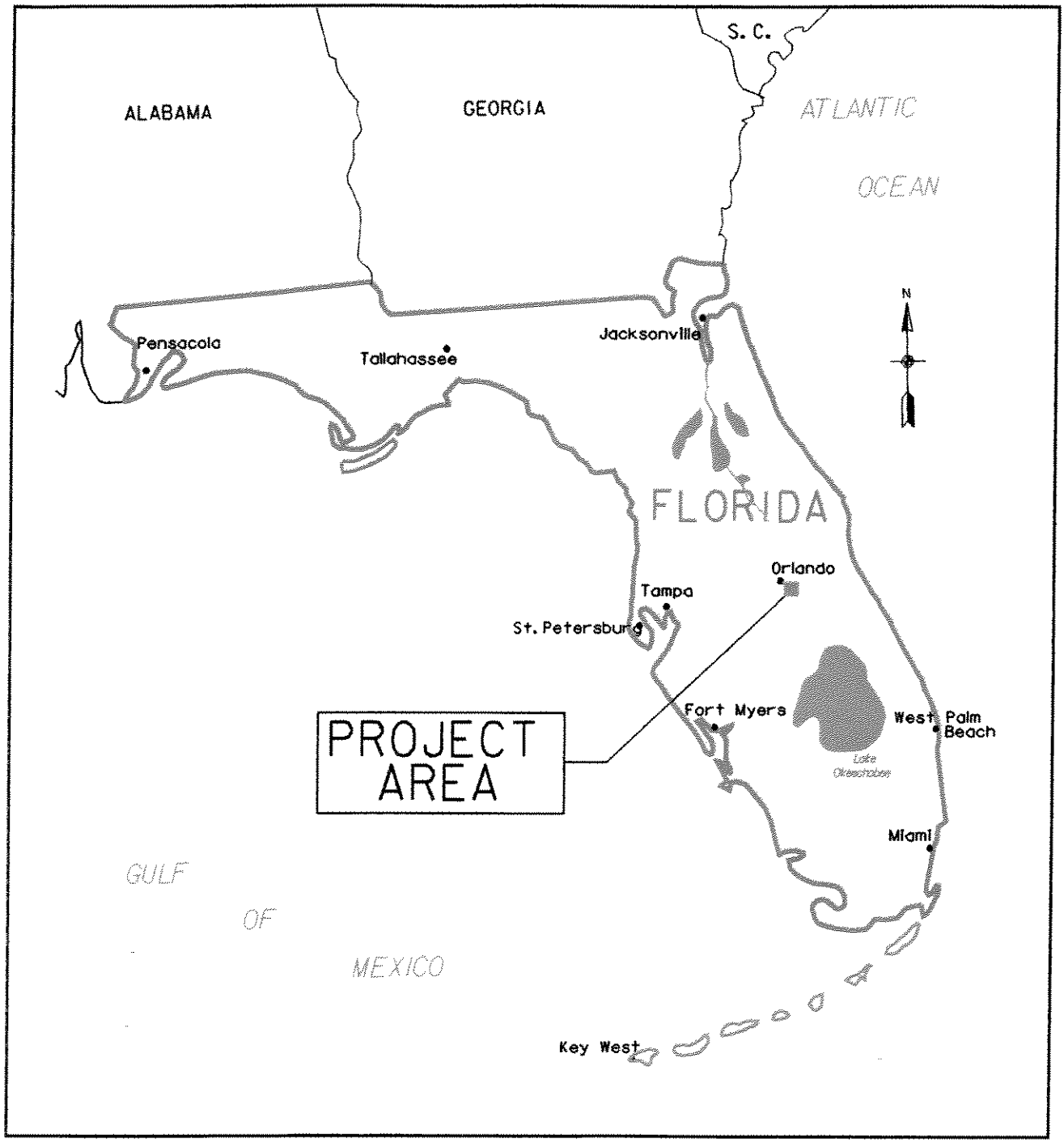
In Orlando, FL there are 78,860 housing units. Of these 37% are single family units and 63% are multi-family units.

3.4.6 New development in the area

New residential housing is being constructed in the area. Goldenrod Road which runs through the center of the former site is being re-paved and new stormwater sewers are being installed.

3.4.7 Typical cross-section of population

Typical cross-section of population: Orlando is 70% white, 27% black and 3% American Indian, Aleut, Asian or Pacific Islander. 8.7% of the population claim to be of Hispanic origins. The median age is 30.2 years, the percentage of people under 18 years of age is 20.9% and the percentage of people over 65 years of age is 11.4%.



ORLANDO AAF TOXIC GAS YARD

FIGURE 3-1

PROJECT LOCATION MAP

ORLANDO AAF TOXIC GAS YARD
ORLANDO, FL

4.0 Physical characteristics of the site

4.1 Geology/physiography

The site area is located in the central Floridian Section of the Coastal Plain physiographic province. This peninsular area of Florida has been divided into three physiographic zones: the Southern or Distal Zone, the Central or Mid-peninsular Zone, and the Northern or Proximal Zone. The site area falls entirely within the Central or Mid-peninsular Zone, which is characterized by a series of ridges and valleys that parallel both the Atlantic coastline and the longitudinal axis of the peninsula.(SCS-Orange County)

The dominant influence on sedimentation in the study area has been the Peninsular arch, a northwest-trending feature that was continuously positive from early Mesozoic (Jurassic) until Late Cretaceous time and was intermittently positive during Cenozoic time. Southwest of and parallel to the Peninsular arch is the Ocala Uplift, which affects only rocks of middle Eocene age and younger. It is a gentle anticlinal flexure about 230 miles long and 70 miles wide exposed near the surface in west-central Florida. (Miller, 1986)

The west-central peninsula of Florida consists of igneous and metamorphic basement rocks overlain by 4,000 feet of sedimentary rocks, principally limestones. These geologic units, and descriptions of their general lithology are summarized in Table 4.1

4.2 Soils

The parent material of the site soils consisted of beds of sandy and clayey materials that were transported by the sea, which often covered the area during the Pleistocene. During the high stands of the sea, Miocene and Pliocene sediments were eroded and redeposited or were reworked on the shallow sea bottom to form terraces.

Majority of site (approx 90%) is underlain by nearly level to gently sloping, poorly drained to moderately well drained soils, sandy throughout, mostly of marine origin. Some have organic stained subsoil at less than 30", some at 30-50". Most areas modified for urban use. Surficial permeability is high, ranging from >6.0 in/hr. High potential for sheet and rill erosion on slopes, otherwise slight owing to the nearly level terrain. Wind erosion is a high hazard on these sandy soils. High corrosivity on uncoated steel. A detailed soil profile of the near-surface site soils is shown in Table 4-2.

TABLE 4-2						
NEAR-SURFACE SOIL PROFILE						
DEPTH (FT)	SOIL DESCRIPTION	PERCENTAGE PASSING SIEVE NUMBER			PERMEABILITY (IN/HR)	PLASTICITY INDEX
		#4	#40	#200		
0-6"	Fine SAND, SP, SP-SM	100	85-100	2-10	>6.0	NP
6-80"	SAND, Fine SAND, SP,SP-SM	100	85-100	2-10	>6.0	NP
SOURCE: SCS SOIL SURVEY OF ORANGE COUNTY,FL.						

4.3 Hydrology

4.3.1 Surface Water

Much of the area is highly urbanized with surface water being directed through a stormwater sewer system into the natural drainage areas located on the site.

The surficial aquifer, or water table aquifer, is found where poorly consolidated or unconsolidated clastic rocks overlie the limestones and dolomites of the Floridan aquifer. The thickness of the shallow aquifer is highly variable due to large variations in the thickness of sands. The shallow aquifer may directly overlie the Floridan aquifer, or they may be separated by confining beds. (Miller, 1986). Recharge to the water-table aquifer is almost entirely from local rainfall, except in those areas where it is hydraulically connected to the Floridan aquifer. Discharge from the shallow aquifer may be by downward percolation into the Floridan Aquifer, seepage into streams, lakes, sinkholes, and pumpage from wells. The shallow aquifer is mainly used for small domestic supplies. (Lichter, et. al., 1964)

CLIMATOLOGICAL DATA FOR ORLANDO, FL

MONTH	TEMPERATURE (°F) RECORD HIGH	RECORD LOW	MONTHLY MAX	MONTHLY MIN	MONTHLY MEAN	PRECIPITATION (INCHES) MONTHLY MIN	MONTHLY MAX	MONTHLY MEAN
JAN	87	19	71.5	49.4	60.5	.15	7.23	2.19
FEB	90	28	73.4	50.9	62.2	.10	8.32	2.73
MAR	92	25	78.1	55.6	66.8	.16	11.38	3.47
APR	96	38	83.2	60.4	71.8	.14	7.72	2.50
MAY	102	49	88.2	66.4	77.3	.43	10.36	3.47
JUN	100	53	91.0	71.4	81.2	1.97	18.28	7.00
JUL	100	64	91.7	73.0	82.3	3.53	19.57	7.97
AUG	100	64	91.6	73.5	82.6	2.92	16.11	6.66
SEP	98	56	89.6	72.4	81.0	.43	15.87	6.76
OCT	95	43	84.1	65.6	74.8	.35	14.51	3.30
NOV	89	29	77.8	57.2	67.5	.03	10.29	1.89
DEC	90	20	72.8	51.3	62.1	T	5.33	1.95
YEAR	102	19	82.8	62.3	72.6	T	19.57	49.88
YEARS OF RECORD	49	49	30	30	30	49	49	30

WIND DATA FOR ORLANDO, FL

MONTH	PREVAILING DIRECTION	WIND SPEED (MPH) MEAN	PEAK GUST
JAN	NNE	8.9	48 (NW)
FEB	S	9.6	51 (W)
MAR	S	9.9	56 (SW)
APR	SE	9.3	53 (NW)
MAY	SE	8.8	68 (S)
JUN	SW	8.0	62 (W)
JUL	S	7.4	68 (W)
AUG	S	7.2	58 (SW)
SEP	ENE	7.7	54 (NW)
OCT	N	8.6	40 (W)
NOV	N	8.6	41 (NE)
DEC	NNE	8.6	43 (W)
ANNUAL	S	8.5	68 (W)
YEARS OF RECORD		43	8

5.0 Real estate

5.1 DOD use

Between 1943 and 1945, the United States acquired from various owners, by condemnation and lease, a total of 2111.5 acres in leasehold for the Orlando AAF Toxic Gas and Decontamination Yard, as shown on Maps M-1 and M-2. A portion of the site in real estate tract 51, Figure 5-1, was improved with a roadway, ordnance storage igloos, and several buildings. A small arms firing range was also constructed in this tract.

In December of 1946, the site consisting of 2111.5 acres in leasehold was determined excess to the needs of the Army Air Force. Between 1946 and 1947, the entire site was disposed of by lease terminations. The terms and conditions of the leases and termination notices, including whether any restoration was required are unknown as copies of these instruments could not be located and disposal information was obtained from the real estate maps and real property management and disposal report.

5.2 Current ownership

Several hundred different owners currently own various portions of the site.

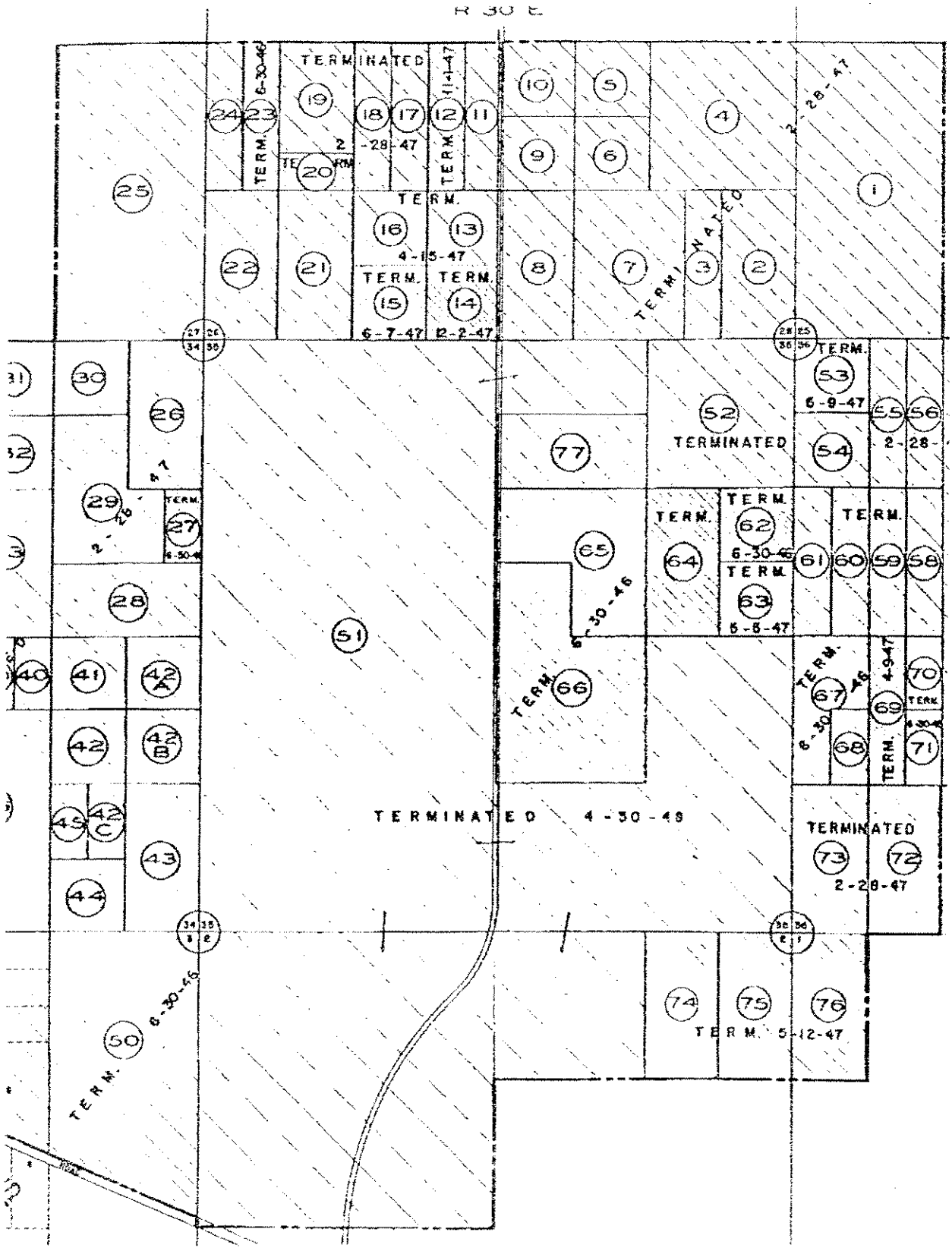


FIGURE 5-1 REAL ESTATE TRACTS 1944

6.0 OEW/CWM site analysis

6.1 Historical summary of OEW/CWM activities

6.1.1 Chemical warfare material use

Orlando Army Air Field Toxic Gas Yard was located southeast of Orlando Army Air Field in the Chemical Warfare Reservation located in Sections 25, 26, 27, 34, 35, and 36 of Township 22 South, Range 30 East and Sections 1, 2, and 3 of Township 23 South, Range 30 East (Corps of Engineers, 1944). Land for the Toxic Gas Yard was acquired from 1943 to 1945. The official start of operations there is unknown.

A considerable number of demonstrations and tests were held at the nearby Pinecastle Bombing Range, with more than one demonstration per month in the first half of 1945 (Sherman, 1945). The source for the chemical munitions for the planes flying out of Pinecastle AAF or Orlando AAF for these demonstrations and tests is logically the nearby Orlando AAF Toxic Gas Yard.

A "Real Property Utilization Inspection Report" dated 10 April 1946 calls the installation Narcoosee Road Toxic Gas & Decontamination Yard of Orlando Army Air Base. The size of the property is listed as 2,105.1 acres. It notes "The site is used for instruction and training. Demonstrations are given on this site periodically." Also, it says 2,000 sq. ft. of closed storage space were 100% utilized, and 5,200 sq. ft. of igloos were 100% utilized (Davis, 1946).

In June 1946 much of the Orlando AAF Toxic Gas Yard was declared excess except tracts 13, 14, 15, 16, 21, 22, and approximately 40% of tract 51. These tracts are shown on Figure 5-1. The exact 40% portion of tract 51 has not been established, but it appears reasonable to be the part contiguous to the other tracts. The above listed tracts were then referred to as the Pinecastle Army Air Field Ordnance Storage Area (Parsons, 1946). A 30 October 1946 "Declaration of Excess Real Estate" declared the Pinecastle Army Air Field Ordnance Storage Area excess (Davidson, 1946). A document titled "Warning Notice" notes that effective 2 December 1946, "Orlando Ordnance Storage Area", used by the AAF for a Toxic Gas and Decontamination Yard, was classified as surplus. It also notes that it was an off-post of Pinecastle Army Airfield (Office of the Chief of Engineers, 1946).

The Orlando AAF Toxic Gas Yard was given a Certificate of Clearance which is described below:

> "All land in tract No. 51, cross-hatched in green as shown on the attached Record Drawing No. 3884-8 Dated 15 November 1944 containing approximately 220 Acres of the Toxic Gas & Decontamination Yard, Orlando Air Base, Orlando, Florida, has been given a careful visual inspection, and is clear of all dangerous and/or explosive

"Amended Description, Orlando Air Base Toxic Gas Yard, Orange County, Fla.", 17 September 1943, O'Brien, Office of the Chief of Engineers

"Certificate of Clearance". Campbell, John B. 1950

"Warning Notice", form 1128. Real Estate, Office of the Chief of Engineers War Department. 1946

Map "AAFTAC & Orlando Army Air Base Layout Plan". Corps of Engineers, Jacksonville District. 1944

Map "Real Eastate-Toxic Gas and Decontamination Yard-Orlando Air Base-Military Reservation". Corps of Engineers, Jacksonville District. 1944.

National Personnel Records Center
Military Records
St. Louis, Missouri

"Declaration of Excess Real Estate". Acc# 342-55-A-5041, Loc# 04-41-39-8-5, file "602 ATSC Reg. 67-32, Inactivation Procedure for AAF Stations". Major Roy a. Davidson, 1946.

"Real Property Utilization and Inspection Report". Acc# 342-52-A-5105, Loc# 04-41-39-8-5, file "601.53 Leases & Loans (KAAF). Richard W. Davis, Inspector. 1946.

"PAAF Ordnance Storage Area". Acc# 342-55-A-5041, Loc# 04-41-39-8-5, file "602 ATSC Reg. 67-32, Inactivation Procedures for AAF Stations". Parsons, M.P. 1946.

USAF Historical Research Agency
Maxwell Air Force Base
Montgomery, Alabama

Historical Data, 901st AAF Base Unit (Tactical Wing), AAF Tactical Center, Orlando, Florida, 1 January 1945 to 1 February 1945. Box 247.12-11 to 247.31. Capt. Bertram Sherman, 1945.

National Archives
Southeast Branch
East Point, Georgia

Map: Radio Transmitter Site Orlando Air Base. Filev "Orlando RT Site". RG 270 WAA, Acc#51A1, Box 493. Corps of Engineers, 1944.

lands.

On the 1943 photo there are no developed features in the area of the gas yard. By 1952, Map M-2, the roadways, bunkers, and buildings of the Army-built gas yard are evident. In the southern part of the gas reservation the small arms target butt is present on the 1952 photo. Analysis of the topography in the gas yard does not reveal any excavations or unusual features in 1952.

Construction of the subdivision in the gas yard area occurred between 1952 and 1963. This subdivision completely covers the area of the gas yard. After 1969, the remaining improvements were constructed. The current conditions have not changed significantly since the 1990 photo. Map M-3 shows the extent of the former gas yard overlaid on the 1990 photo.

7.0 Evaluation of ordnance contamination

7.1 Chemical warfare material contamination

No records could be found detailing the operations at the Orlando AAF Toxic Gas and Decontamination Yard. Air photos and real estate documents indicate that ordnance storage igloos, closed warehouses, and other small buildings were constructed in a portion of the site. The real estate documents also state that there were bleachers and latrines erected in this area.

The stated original intended purpose of the yard was for the School of Applied Tactics at Orlando AAF. During its short lifetime the yard came under various jurisdictions as evidenced by the number of names by which it was identified, as mentioned in section 1.2. It was probably used for on-site chemical training and demonstrations, in addition, to possibly providing the chemical munitions for the Pinecastle Bombing Range.

At one point the Dugway Mobile CWS Unit had requested that an aircraft be made available at Orlando AAF to assist in the chemical bombing activities at the Withlacoochee Range. It was not clear if just the plane was needed, or a plane loaded with chemical munitions.

In a memorandum, dated 9 October 1944, requesting enlargement of the ordnance ammunition area at Pinecastle AAF, reference is made to unsuitableness of using the Orlando Air Base Ammunition Area, because of the limited number of men, the distance, and the time between notification and take-off of missions (deV Cannon, 1944).

The memorandum of 30 October 1946 declaring the toxic yard to be excess property states that "...toxic gas handling areas are currently being neutralized" (Davidson, 1946).

A certificate of clearance was issued on 2 February 1950 for a 220 acre part of tract #51, which was the area of the actual gas yard. Shortly after this, during the 1950's, development of the area was begun. Jacksonville District, COE, state in the Findings and Determination of Eligiblity for Orlando AAF, dated 9 December 1985 that the city and county officials have had no complaints or reports of toxic materials related to the toxic gas yard site.

7.2 Biological warfare material

Documents indicate that chemical defoliants may have been used on this site. No evidence has been found that would confirm their continuing presence there.

8.0 Conclusions and recommendations

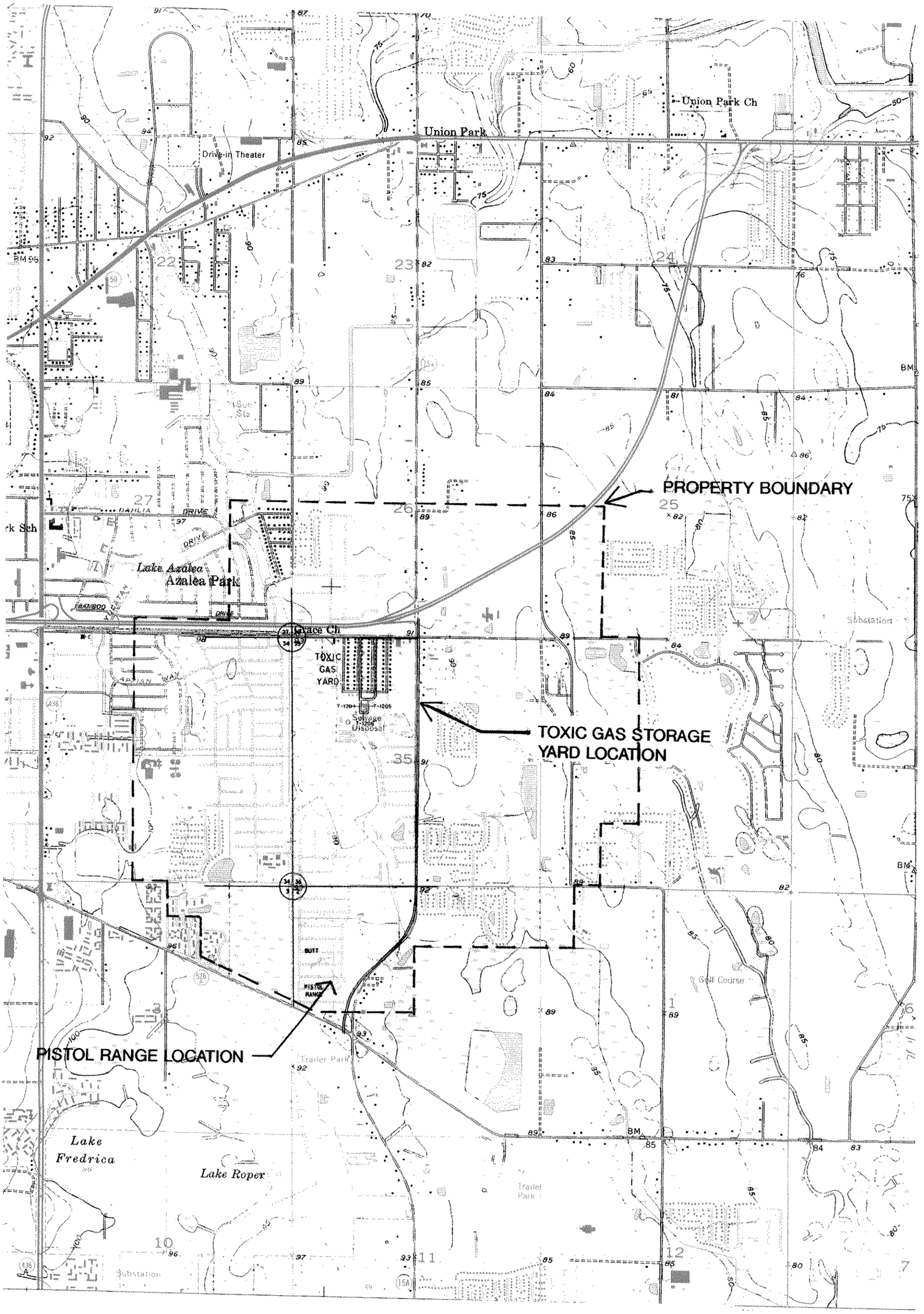
8.1 Conclusions

The Orlando AAF Toxic Gas and Decontamination Yard was used for CWM training and demonstration and possibly chemical munitions storage. Documents indicate that it was considered for conventional ordnance storage, but probably not ever used as such. The actual area of the gas yard has been extensively developed over the intervening years and there are no reports of CWM being discovered.

8.2 Recommendations

The Risk Assessment Procedures for Ordnance and Explosive Waste (OEW) Sites Form, dated 10 February 1993, has been prepared for the Orlando AAF Toxic Gas and Decontamination Yard and is included in Appendix I. Based on the best available data a score of RAC 5 has been determined for the site. RAC 5 indicates that no further action is recommended. We concur with this assessment.

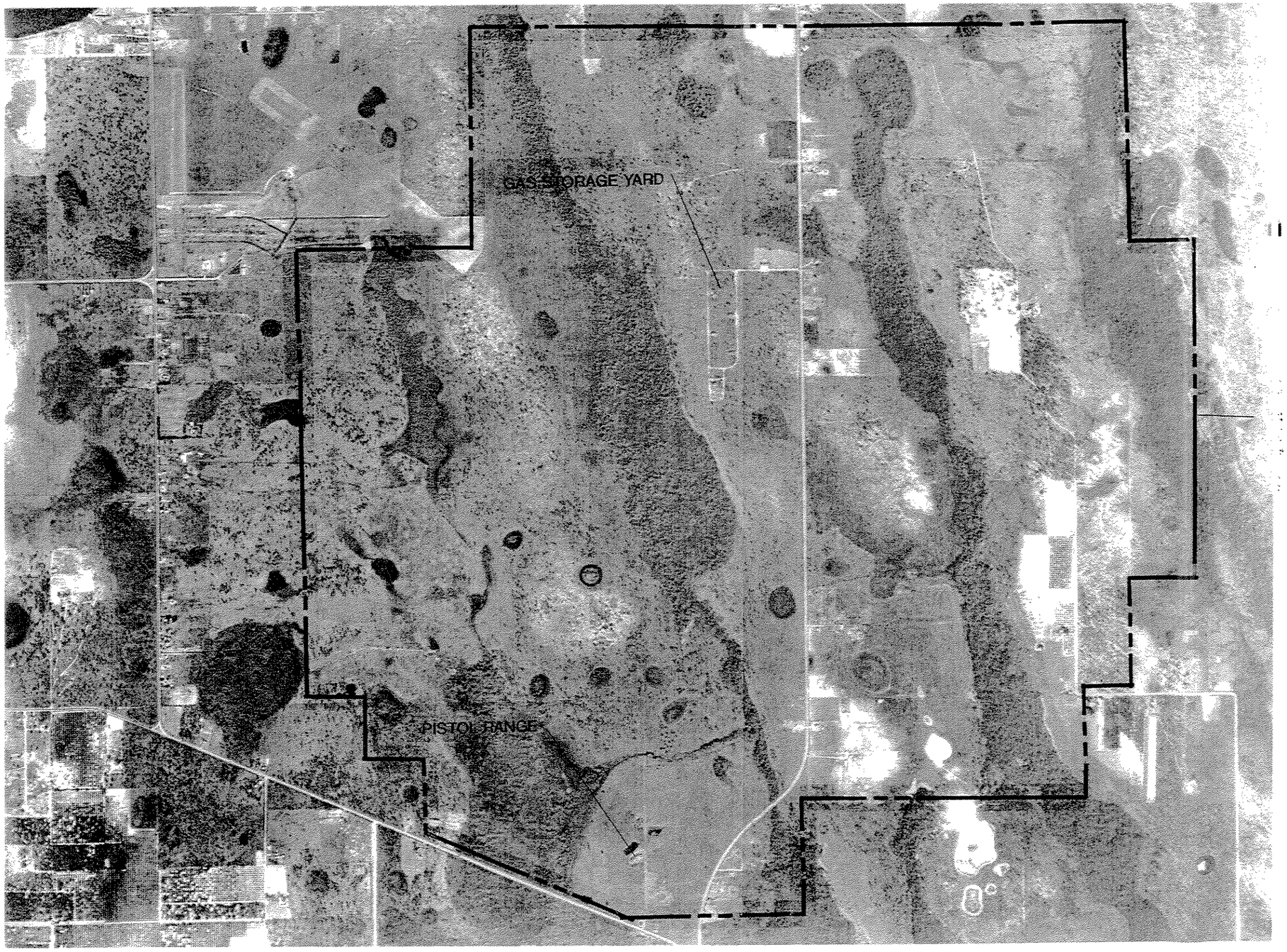
MAPS / DRAWINGS



MAP M-1

VICINITY MAP ORLANDO AAF TOXIC GAS STORAGE ORLANDO FLORIDA	
PROJ. DATE:	DATE OF MAP:
	NOT TO SCALE

DIGITIZED FROM EXISTING MAPS



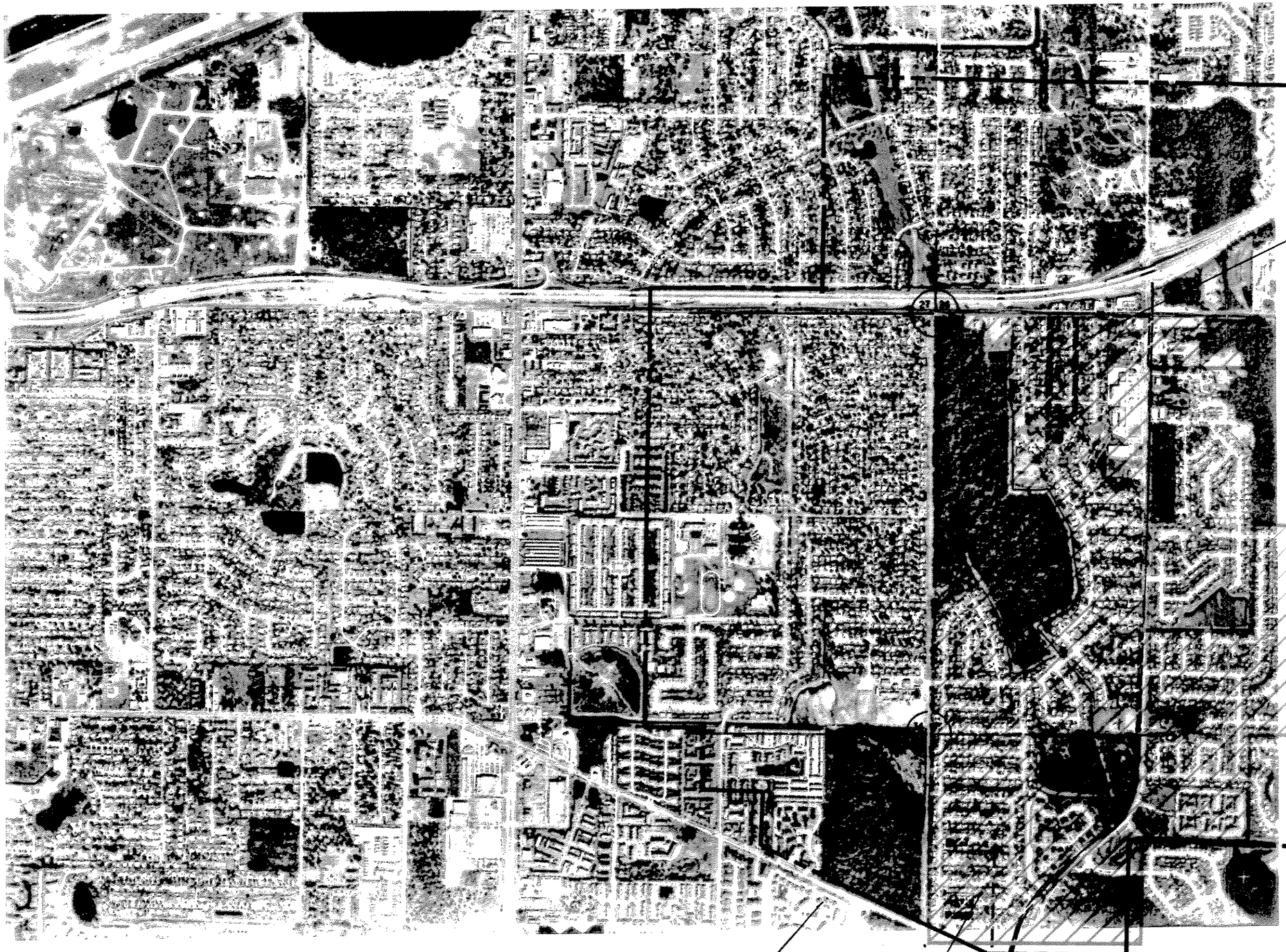
PROPERTY BOUNDARY

N

MAP M-2

1952 PHOTO
ORLANDO AAF TOXIC GAS YARD
ORLANDO, FL

PROJ. DATE:	DATE OF PHOTO:
	NOT TO SCALE



MAP M-3

1990 PHOTO
ORLANDO AAF TOXIC GAS YARD
ORLANDO, FL

PROJ. DATE:	DATE OF PHOTO:
	NOT TO SCALE

APPENDIX A

REFERENCES

REFERNCES FOR GEOLOGY

Miller, James A.
USGS Professional Paper 1403-B; Hydrogeologic Framework of the Floridan Aquifer System in Florida and in Parts of Georgia, Alabama, and South Carolina; 1986

Lichter, William F., et. al.
Information Circular No. 41; Interim Report on the Water Resources of Orange County, FL, USGS

SCS-Orange County, FL

REFERENCES FOR OEW/CWM SITE ANALYSIS

Campbell, John B.
1950 "Certificate of Clearance". Jacksonville Corps of Engineers, Jacksonville, Florida

Office of the Chief of Engineers (Real Estate, War Department)
1946 "Warning Notice", form 1128. Jacksonville District Corps of Engineers, Jacksonville, Florida.

Corps of Engineers
1944 Map "AAFTAC & Orlando Army Air Base Layout Plan". Jacksonville District Corps of Engineers, Jacksonville, Florida.

1944 Map "Real Estate-Toxic Gas and Decontamination Yard-Orlando Air Base-Military Reservation". Jacksonville District Corps of Engineers, Jacksonville, Florida.

Davidson, Major Roy A.
1946 "Declaration of Excess Real Estate". Acc# 342-55-A-5041, Loc# 04-41-39-8-5, file "602 ATSC Reg. 67-32, Inactivation Procedure for AAF Stations". National Personnel Records Center, St. Louis, Missouri.

Davis, Richard W.
1946 "Real Property Utilization and Inspection Report". Acc# 342-52-A-5105, Loc# 04-41-39-8-5, file "601.53 Leases & Loans (KAAF). National Personnel Records Center, St. Louis, Missouri.

deV Cannon, William
1944 "Request for Enlargement of Ordnance Ammunition Area". Acc# 342-55-A-5041, Loc # 04-41-39-8-5, file "600.4 Buildings (Altering, Relocating and

APPENDIX B

ACRONYMS

ORDNANCE AND EXPLOSIVE WASTE
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ORLANDO AAF TOXIC GAS AND DECONTAMINATION YARD

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APPENDIX B

ACRONYMS

AAF	Army Air Field
AF	Air Field
AFB	Air Force Base
ASR	Archive Search Report
BGR	Bombing and Gunnery Range
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
CEHND	Corps of Engineers, Huntsville Division
COE	Corps of Engineers
CWM	Chemical Warfare Material
CWS	Chemical Warfare Service
DERA	Defense Environmental Restoration Account
DERP	Defense Environmental Restoration Program
DOD	Department of Defense
DPG	Dugway Proving Ground
EOD	Explosives Ordnance Disposal
EPA	Environmental Protection Agency
FUDS	Formerly Used Defense Sites
GSA	General Services Administration
HTW	Hazardous and Toxic Waste
INPR	Inventory Project Report
IRP	Installation Restoration Program
MCX	Mandatory Center of Expertise
NPS	National Park Service
OEW	Ordnance and Explosive Waste
SARA	Superfund Amendments and Reauthorization Act
SLD	St. Louis District, Corps of Engineers
USACE	U.S. Army Corps of Engineers
USADACS	U.S. Army Defense Ammunition Center and School
USAEDH	U.S. Army Engineer Division, Huntsville, AL
WD	War Department
WNRC	Washington National Records Center

APPENDIX C

REPORTS/STUDIES/LETTERS/MEMORANDUMS

ORDNANCE AND EXPLOSIVE WASTE
CHEMICAL WARFARE MATERIALS
ARCHIVES SEARCH REPORT

ORLANDO AAF TOXIC GAS AND DECONTAMINATION YARD

ORLANDO, FLORIDA
ORANGE COUNTY

DERP-FUDS NO. I04FL039600

APPENDIX C

REPORTS/STUDIES/LETTERS/MEMORANDA

APPENDIX C-1
SITE SPECIFIC SAFETY PLAN

SITE SPECIFIC SAFETY AND HEALTH PLAN (SSHP)
for
Orlando AAB, Orlando AAB Toxic Gas and Decontamination Yard, Pinecastle AAF and Ft. Pierce Amphibious Training Base

1. PURPOSE. This plan prescribes the safety and health requirements for team activities and operations conducted to determine the presence of ordnance and explosive waste (OEW) from conventional munitions and/or chemical warfare material (CWM) at the specified site.

2. APPLICABILITY. This plan applies to HQUSACE personnel and assigned elements under the control of HQUSACE.

3. REFERENCES. The provisions of this plan implement safety and health standards and requirements contained in 29 CFR 1926, 29 CFR 1960, 30 CFR 56, Executive Order 12196, DODI 6055.1, AR 385-10, AR 385-40, and EM 385-1-1.

4. STATEMENT OF SAFETY AND HEALTH POLICY.

a. No person shall be required or instructed to work in surroundings or under conditions which are unsafe or dangerous to his or her health.

b. Each team member has the responsibility to immediately halt the team's operations and activities upon encountering an unsafe situation or act.

c. Each team member is responsible for reading the SSHP before a site visit, complying with applicable safety requirements, wearing prescribed safety equipment, knowing the symptoms of chemical agents, and preventing avoidable accidents.

5. TRAINING. Prior to site visits each team member shall have received the necessary training, to include refresher training on a scheduled basis, as required by the references listed in paragraph 3.

6. REPORTING REQUIREMENTS. Safety violations will be immediately reported to the designated team safety officer. The team safety officer shall report the findings of fact regarding the safety violation(s) through designated channels, as prescribed by the references listed in paragraph 3.

7. SITE SPECIFICS. Site description, possible hazards, OEW procedures, emergency telephone numbers (medical, police, fire, and other contacts), personnel protective equipment, weather precautions, responsible personnel, site control and communications are provided in enclosure 1AA. Enclosure 1 is the maps of the sites to be surveyed. Enclosure 2 is the symptom charts. Prior to entering the site itself, a briefing by the team safety officer shall be provided to all team members.

Patrick O'Donnell
Safety Officer

Enclosure 1AA

SITE SPECIFICS
for
Drew Field AAF, Bushnell AAF, and Brooksville AAF
(Tampa Intl. Airport, Bushnell Local Area and Brooksville Airport)

1. Site Descriptions:
See Briefing by Mr. Tom Freeman

2. Possible Hazards.

a. OEW/CWM Hazards. A records search to date indicates that there may be contamination from the chemical rockets fired at Ft. Pierce. Ft. Pierce was also the site of full scale tactical beach landing and destruction efforts. High explosive munitions, bombs and shells could be present at this site. No records found indicate actual use of CWM at the other sites. However, the Orlando AAB Toxic Gas and Decontamination Yard was obtained for CWS activities. Normal safety precautions will be observed at all times. Team members should be familiar with the characteristics and symptoms associated with all agents mentioned. All members should refer to the charts at the back of this plan for full information.

b. Toxic Wastes. Aviation fuel had been used at all of the air fields.

c. Natural Hazards. In addition to snakes, alligators and other dangerous wildlife, also avoid harmful and poisonous vegetation. Exercise caution in walking the area to avoid slips, trips, and falls. Site vegetation could pose a trip hazard.

d. Other Hazards. Other hazards associated with any outdoors trek are expected.

3. OEW/CWM Reconnaissance Procedures.

a. Movement. Before walking in a particular direction, scan your approach with your eyes. Do not stray from travelled paths or enter areas with dense vegetation. REMEMBER -- STAY ALERT, STAY ALIVE! Teams will walk in pairs with a safety officer monitoring a pair of individuals. It is important to stay in eyesight of team members and to stay in pairs.

b. Sighting. Upon sighting a suspicious object, note its size, shape, any markings, and specific location. DO NOT TOUCH ANYTHING!

c. Actions. Alert all team members. Withdraw to a safe distance. The safety officer will mark the area with survey tape. If the suspicious object is considered to be an immediate threat, designated team members will remain in the area at a safe distance to warn civilians until the unexploded ordnance (UXO) personnel arrive. Notes regarding the suspicious object will be compiled by the project manager on the team for the archival search report.

d. Notification. If the suspicious object is considered to be

APPPENDIX C-2
SITE VISIT TRIP REPORT

CELMS-PM-M 11 June 1993

TRIP REPORT for 24-28 May 1993

SUBJECT: Site visits and archives research for Pinecastle AAF, Orlando AAB, Orlando AAB Toxic Gas and Decontamination Yard, and Ft. Pierce Amphibious Training Base

1. SLD personnel on trip:

Tom Freeman
Pat O'Donnell
Shelia Thomas

2. 24 May 1993

SLD personnel travelled from St. Louis, MO to Orlando, FL to perform additional research and site inspections for 3 of the subject sites located in the Orlando, FL area. All photographs taken on the site inspections will be included in the archives search report. We were joined in Orlando by Mr. Robert Bridgers of the Jacksonville District, COE.

The first site to be inspected was the Orlando AAB Toxic Gas and Decontamination Yard (Gas Yard), located near the intersection of Lake Underhill and Goldenrod Roads as shown on Incl 1. Preliminary data indicated that although the Gas Yard consisted of 2100+ acres, the main gas handling activities took place on a 220 acre tract on the north edge of the property. Review of the 1956 USGS quadrangle map for this area, photo revised in 1970 and 1980, showed that a residential subdivision had been constructed on this 220 acre tract. A certificate of clearance had been issued for this tract on 2 Feb 1950, which indicated that it had been thoroughly cleared of all dangerous materials and could be used for any purpose for which it was suited.

Arriving at the site we inspected each street of the subdivision that occupied the former Gas Yard. The houses are all similar in design and appear to have been constructed in the same late 1950 or early 1960 period. There are no basements under the houses, but a few in-ground pools had been constructed. No major excavations or other out of the ordinary conditions were noted in the subdivision. Immediately south of the subdivision is a County sewage treatment plant that was apparently in existence, in some form, at the time of the Gas Yard. Leaving the subdivision we travelled south along Goldenrod Road, the major north-south roadway that split the original 2100+ acre tract. This roadway is currently in the process of being widened and improved with new drainage structures.

the industrial park cuts through this area and ties into the new control tower area. After inspecting the old hangar area north of the existing Navy operations, we proceeded to the east side of the field. Several drainage ditches have been constructed in the southwest corner of the old field, where large quantities of soil materials have been moved. Additionally, stormwater retention and settling basins have been dug along the west side of the field. There have been no reports of any ordnance discovered during any of these excavations.

Also along the west side of the air field are several former Army buildings. These include a large hangar that is presently being used to make ammunition bursters and smaller wooden storage buildings. In the northwest corner of the air field we inspected an old small arms ammunition bunker. This bunker is still in good condition but is not used for anything currently. We made a complete circuit around present day Orlando Executive Airport. After making arrangements with Mr. Allen to obtain a copy of the 1944 airphoto of the field, we continued north to the ordnance area of the former air field. This ordnance area has been completely developed with residences and office buildings. Two lakes in this area have been partially filled-in and greatly reduced in size from their 1944 dimensions. There was evidence of any ordnance or ordnance storage structures visible. We left the former Orlando AAB and continued to the former Pinecastle AAF, now Orlando International Airport.

SLD personnel accompanied by Mr. Robert Bridgers of Jacksonville District met with Mr. Kay Yeuell, Environmentalist for the Orlando International Airport. After the appropriate site and safety briefing the entire group inspected selected areas of the airport. The route of the inspection is shown on Incl 4. The first area visited was the area of Ordnance Building # 210. Although this building is shown in the northeast area of the former airfield on the 1944 layout plan, there are no ordnance storage areas identified. This northeast area is close to the county road that comes directly from the Orlando AAB Toxic Gas and Decontamination Yard. It would have been a convenient access point to bring CWM onto Pinecastle AAF. The area around the former Ordnance Building has been utilized as a radar site. Some portions of the area have been developed into a rental car storage lot or have been removed when the storm drainage ditches were excavated. Some old 55 gallon barrels were observed close to the radar building. They did not appear to be WW II vintage. Two of the airplane hardstands and a part of the taxiway are still present.

Travelling to the southwest area of the air field we inspected the explosives storage bunkers constructed near the end of WW II. Recently 600 rounds of .50 caliber ammunition and 100-200 practice rockets had been unearthed in the bunker area. These items had been properly disposed of, but apparently no attempt had been made to search other portions of the bunker area. The bunkers are still used to store pyrotechnics for Disney World and miscellaneous items for others. Red survey flagging and wooden marker stakes were still present on the grounds. Mr. Yeuell reported that he had not heard of any other ordnance or CWM being found at Pinecastle.

4. <u>26 May 1993</u>

5. 27 May 1993

All SLD personnel accompanied by the following met with Mr. George Seay of Dick Bird Realty Co., , Vero Beach, FL.

Mr. Robert Bridgers, Jacksonville District
Mr. Jack Herrington, Dynamac Corp., 404-681-0933
Mr. Chip Love

Mr. Seay had written letters concerning the Gilbert Property, south of Vero Beach, which had resulted in a Congressional inquiry being sent to the Jacksonville District. In the letters Mr. Seay had cited debris and building remnants apparently left behind by the DOD after use in WW II. He is trying to sell this property and concern has been raised over the liabilty of these remains. SLD had already identified the Ft. Pierce Amphibious Training Base (ATB) as a potential CWS site. Corps of Engineers real estate data has not been able to accurately define the total extent of lands used during the training operations. We knew that the Headquarters for the ATB had been in the town of Ft. Pierce and that activities had taken place both north and south of there. Since Mr. Seay had definite information that DOD operations had taken place on this particular piece of property, we decided to begin our investigations for CWM in this area rather than at Ft. Pierce. At the meeting with Mr. Seay he informed us that about 20 years ago incendiary bombs had been uncovered during the construction of the Seagrove Subdivision, north of the Gilbert property. Additionally, dud bombs were discovered when the The Moorings (riverside properties) were constructed. Locations of all properties are shown on Incl 5. Local reports are also that the Indian River County Mosquito Control Agency have discovered munitions when they have constructed drainage control trenches. These munitons have included bundles of dynamite with the blasting wires still attached. Mr. Seay indicated that he thought all munitions had been disposed of through proper channels.

Mr. Seay provide a copy of a report prepared by Knight-McGuire, 830 Azalea, Vero Beach, FL (407)231-2533 which indicates that the Naval Demolition Research Unit had used the Gilbert property and constructed numerous facilities there, as shown in the Joint Army Navy Experimental and Testing Board (JANET) report. A copy of lease indicating the DOD use had been found in the County Courthouse. The Knight-McGuire report outlined the various buildings and debris left on the site. We met briefly with Mr. Knight to discuss details of his report and seek possible sources for air photos. Mr. Knight indicate that the north 100' of the Gilbert property had recently been sold and that there might be ongoing clearing operation there. The entire entourage left Mr. Knight and travelled to the property. Three men were clearing the underbrush and smaller trees with chainsaws, a front-end loader, and a dump truck. At the site, Mr. Seay indicated that the mound of debris along the norht edge of the property had been pushed there when the adjacent property had been developed. Considering the urgency of seeing some of this debris before it was removed we began our site inspection immediately after the appropriate safety briefing. The foundations of several old structures were evident in the underbrush. Additionally, several piles of miscellaneous

could not recall anything of that nature in the 20 years she has lived in Vero Beach.

From there Ms. Thomas and Mr. O'Donnell went to the Indian River County Mosquito Control District to see if they had any aerial photographs of the area from the 1940's and 1950's. They had some good quality aerial photos of the coastal area in Indian River County. They talked with the Director, Mr. E. J. Beidler, (407) 562-2393 who remembered some ordnance being uncovered near the Indian River when the Moorings subdivision site was being prepared. Ms. Thomas and Mr. O'Donnell left to meet with Mr. Freeman and Mr. Brodgers at the possible OEW site.

6. 28 May 1993

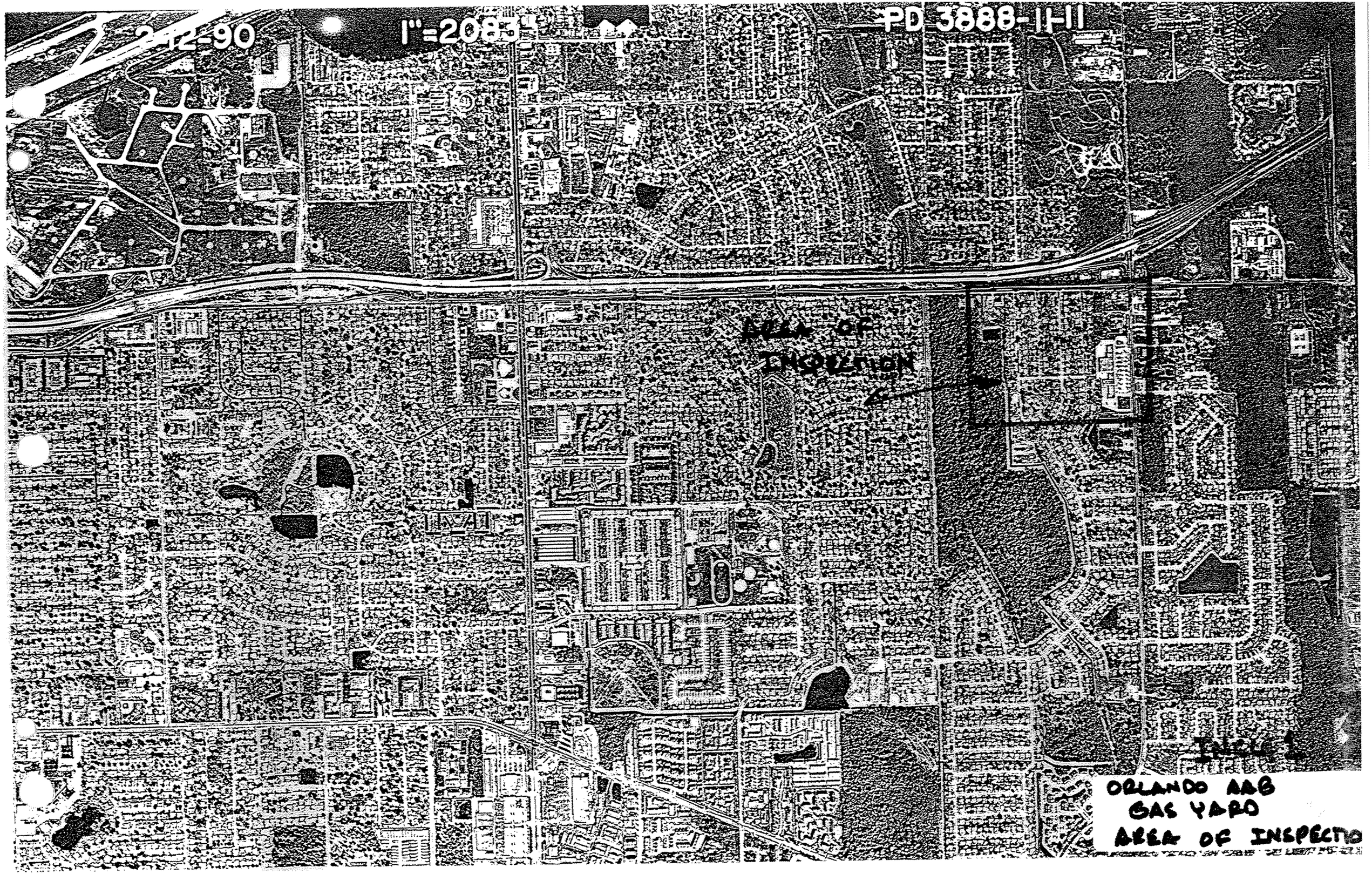
Mr. O'Donnell and Ms. Thomas returned to the Indian River Mosquito Control District and picked up aerial photographs.

Mr. Freeman, accompanied by Messrs. Bridgers, Herrington, and Love, travelled to Ft. Pierce, FL to inspect the Headquarters area of the ATB. The first stop was at the current Coast Guard facility, which is a part of the much larger former Navy facility. Coast Guard personnel did not have any knowledge of munitions or CWM being found in the area.

The group next proceeded to the St. Lucie County Museum located on the former ATB facility and met with Mr. Allan King. The Museum had just hosted a 50th anniversary celebration for servicemen stationed at the ATB. Mr. King indicated that before DOD involvement there were only 4 buildings on South Hutchinson Island. The mosquitoes were so bad nobody wanted to live there. The Headquarters and related facilities were located on the south island. Most of the actual military operations took place on North Hutchinson Island. The Museum currently has an extensive photograph display of the ATB operations. Some of the photos showed men in toxic gas training. Other photos showed extensive explosions and destruction on the beaches.

The group then went to the Underwater Demolition Team/SEAL Museum joined by Ms. Thomas and Mr. O'Donnell. Mr. Jim Watson, Curator, (407) 595-1570, was not in that day. Mrs. Patricia White, Assistant Curator, indicated that information on the actual operations was limited. The Museum does have extensive personnel listings of people who had been involved with underwater demolition, not necessarily at Ft. Pierce. Ft. Pierce was the "birthplace" of underwater demolition. We will contact Mr. Watson at a later date.

SLD personnel were required to return to Orlando for the flight back to St. Louis. Mr. Bridgers and the Dynamac personnel were going to continue to research the extent of the property used in the ATB operations.


2-12-90
1"=208'
PD 3888-IH
AREA OF
INSPECTION
Intch
ORLANDO AAB
GAS YARD
AREA OF INSPECTIO

WAR DEPARTMENT

CORPS OF ENGINEERS, U.S. ARMY

LAKE

ORDNANCE AREA

SEWAGE DISPOSAL PLANT

UNDERGROUND WATER (TANK) RESERVOIR

CHEMICAL WARFARE RESERVATION

LOCATION OF RADIO RANGE BUILDING

42% N
15% NE
20% Calm
E 5%
6% W
10% S

Wind rose based on daily average wind direction as determined by observer for the United States Weather Bureau for a 5 year period at Orlando, Florida.

LAKE BARTON

LOCATION OF CHEMICAL WARFARE RESERVATION

Cheney Highway

Property Line

Robinson Ave.

Washington St.

Central Ave.

South Street

City Limits

Bumby Ave.

Forest Ave.

Mills Road

Cannon Airport

200' x 5100'

200' x 5300'

200' x 4500'

FIRE STATION & BARRACKS

BEACON

BUNKER

SIDEWALK

AIRPLANE FACTORY

SWINGING COMPASS BASE

RUNWAY No. 1 E-W 200' x 4550'

RUNWAY No. 2 NW-SE 200' x 5350'

RUNWAY No. 1 N-S 200' x 5500'

RUNWAY No. 2 NE-SW 200' x 5500'

LAKE YVONNE

LAKE UNDERHILL

SEAPLANE RAMP AND DOCK

BOAT RAMP

SOUTH TENT AREA

PAVING NOTES

1. RUNWAYS:
   Base: Sand Asphalt
   Surface: Asphaltic Concrete
2. TAXIWAYS: PERIMETER
   Base: 6" Limerock
   Surface: Bit. Seal Coat
   TAXIWAYS: DISPERSAL & STUBS
   Base: 3" Limerock
   Surface: Bit. Seal Coat
3. HARDSTANDINGS: Portland Cement Concrete
4. APRONS: Portland Cement Concrete

INC 2

AAFTAC & ORLANDO ARMY AIR BASE
ORLANDO, FLORIDA
LAYOUT PLAN
IN 55 SHEETS SHEET NO. 10 SCALE 1"=400'

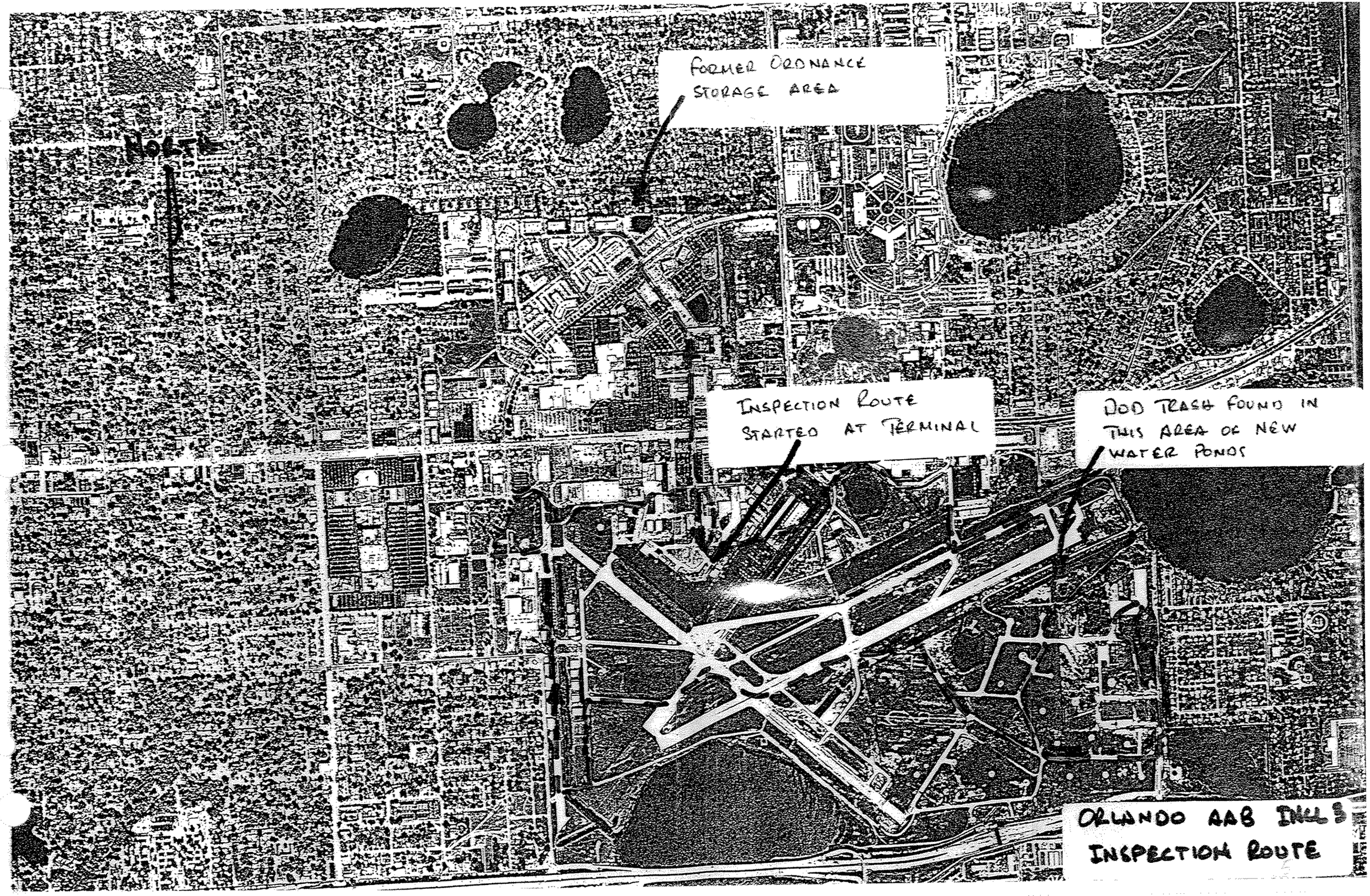
U. S. ENGINEER OFFICE, JACKSONVILLE, FLA., JULY, 1944

SUBMITTED: K. E. Warner, ASSOCIATE ENGINEER
APPROVAL RECOMMENDED: F. F. Tippit, ASSISTANT DISTRICT ENGINEER
APPROVED: [signature], COLONEL, CORPS OF ENGINEERS, DISTRICT ENGINEER
DRAWN BY [illegible] CHECKED BY [illegible]
FILE NO. 6-22-1170

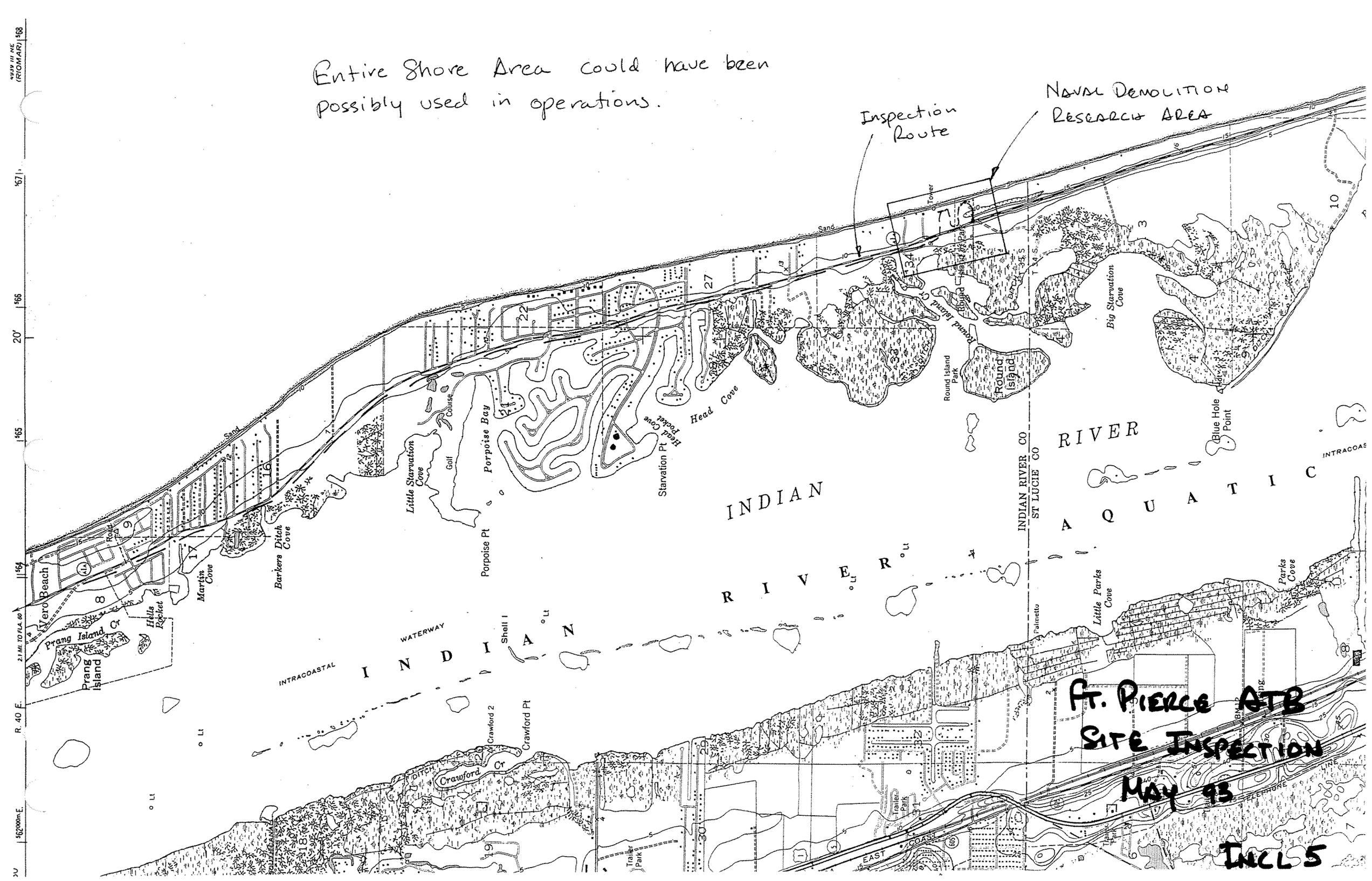
CHANGE	DATE	REVISION	REV. BY	CK. BY	APP. BY

THIS DRAWING CORRECT TO 7-28-44

15th Air Ftd. ORLANDO


NORTH
FORMER ORDNANCE STORAGE AREA
INSPECTION ROUTE STARTED AT TERMINAL
DOD TRASH FOUND IN THIS AREA OF NEW WATER PONDS
ORLANDO AAB INL 3
INSPECTION ROUTE

Entire Shore Area could have been possibly used in operations.



PINECASTLE AAF
SITE INSPECTION
MAP 1993

APPROACH CLEARING 50:1
5200'
CLEAR ZONE
100:1
2640'
2640'
VORTAC
LOCALIZER SYSTEM
500.0'±
1500' RADIUS
STERILE AREA
HIRL
PROPOSED 200X10,000 RUNWAY
FUTURE C LIGHTING
GLIDE SLOPE FACILITY
TRANSMISSOMETER SYSTEM
TOUCHDOWN ZONE LIGHTING
CLEAR ZONE 5000'±
ALSF 2
2P
100:1
MIDDLE MARKER
LAKE
APRON
FUTURE TERMINAL AREA STAGE I
FUTURE TERMINAL AREA STAGE II
5P
4P
3200'
5000
1000'±
5260'±
1120 AC.
BRL
APRON
RADAR
FUTURE
1000' RAD. STERILE AREA
3P
Jet Assisted Take-off (JATO) Canisters found in this area
FUTURE ACQUISITION
38 AC.
SR 436
AIR FORCE PROPERTY
8
6
Location of former ordnance building
25' PAVED SHLDR.
5
4
9
Restricted Army Enclosure located in this area.
3960'±
AIR FORCE PROPERTY
100:1
FORCE
CLEAR
ALSF 2
2P
100:1
LAKE
WARREN
EXIST. BEE LINE EXPRESSWAY
LOCALIZER SYSTEM
FUTURE CENTERLINE LIGHTING
25' PAVED SHOULDERS
EXIST. 200 X 12,000' RUNWAY
LEASE LINE
TOUCHDOWN ZONE LIGHTING
GLIDE SLOPE FACILITY
CLEAR ZONE 5000'±
7
100:1
GLIDE SLOPE FACILITY
EXIST. 300' X 12,000' RUNWAY
LOCALIZER SYSTEM
SERVICE ROAD
AIR FORCE APRON
PROP. SECURITY FENCE
EXIST. I.L.S. LOCALIZER
52 AC.
CONWAY RD.
1800'±
GOLF COURSE
MC CO AIR FORCE BASE
3
PROPOSED SECURITY FENCE
Ordnance Storage Area
FUTURE R
DAETWYLER DRIVE
MAIN GATE
CAMP GROUND
RELOC BOGGY CREEK RD
FUTURE R
LAKE CONWAY
APPROVED
Col. T. Meacham
1000 0 1000
INCL

APPENDIX C-3

CERTIFICATE

CERTIFICATE OF CLEARANCE

Jacksonville, Florida.

2 February 1950

All land in tract No. 51, cross-hatched in green as shown on the attached Record Drawing No. 3384-8 Dated 15 November 1944 containing approximately 220 Acres of the Toxic Gas & Decontamination Yard, Orlando Air Base, Orlando, Florida, has been given a careful visual inspection, and is clear of all dangerous and/or explosive materials reasonably possible to detect. It is recommended that this land be used for any purpose for which it is suited.

JOHN B. CAMPBELL
Chief, Dedudding & Decontamination Branch

APPENDIX D

NOT USED

APPENDIX E

NOT USED

APPENDIX F

NOT USED

APPENDIX G

PRESENT SITE PHOTOGRAPHS

PHOTO-1 LOOKING SOUTH ON EGAN ROAD ALONG SOUTHWEST SIDE OF STREET (FORMER GAS AND DECONTAMINATION YARD).

PHOTO-2 LOOKING SOUTH ON EGAN ROAD ALONG SOUTHEAST SIDE OF STREET (FORMER GAS AND DECONTAMINATION YARD).

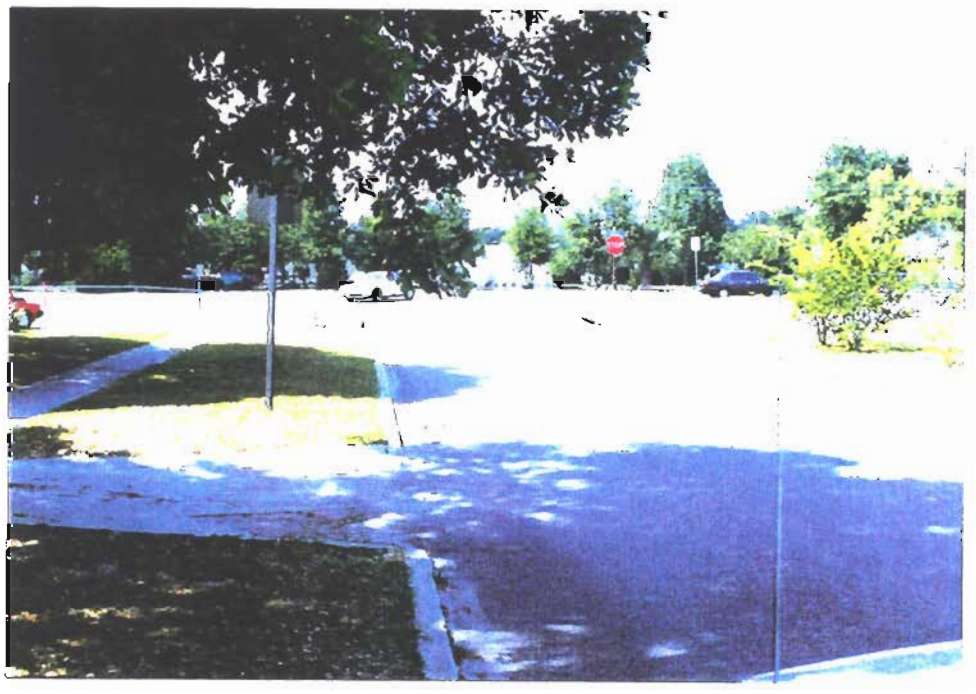


PHOTO-3 LOOKING NORTH AT LAKE UNDERHILL AND EAGAN ROADS (FORMER GAS AND DECONTAMINATION YARD).

PHOTO-4 LOOKING NORTH ON EGAN ROAD (FORMER GAS AND DECONTAMINATION YARD).

PHOTO-5 LOOKING EAST ON FLANDERS FROM CORNER OF EAGAN AND FLANDERS (FORMER GAS AND DECONTAMINATION YARD).

PHOTO-6 LOOKING WEST ON FLANDERS FROM CORNER OF EGAN AND FLANDERS (FORMER GAS AND DECONTAMINATION YARD).

PHOTO-7 LOOKING SOUTH INTO SEWAGE DISPOSAL AREA ON CAPEHART DRIVE (FORMER GAS AND DECONTAMINATION YARD).

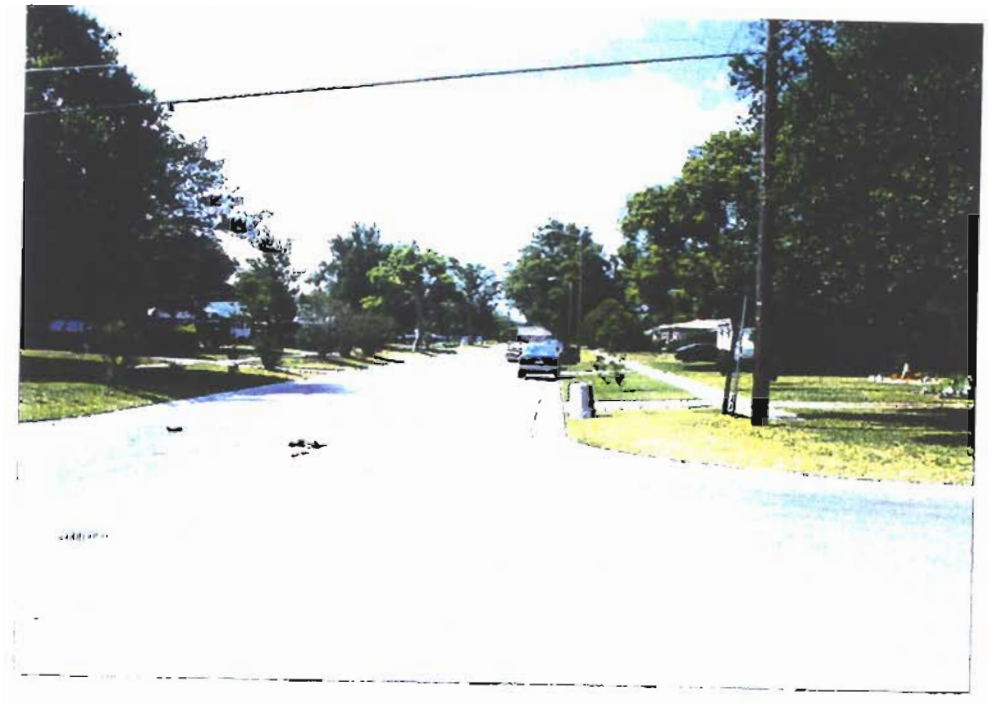


PHOTO-8 FROM THE CORNER OF CAPEHART AND FLANDERS (GAS AND DECONTAMINATION YARD).

PHOTO-9 LOOKING NORTH ON DIAL DRIVE (FORMER GAS AND DECONTAMINATION YARD).

PHOTO-10 LOOKING NORTH ON FABER DRIVE (FORMER GAS AND DECONTAMINATION YARD).

PHOTO-11 LOOKING SOUTH ON HWY 55 AT SEWER PROJECT (FORMER GAS AND DECONTAMINATION YARD).

PHOTO-12 LOOKING SOUTH ON HWY 55 NEAR SEWER PROJECT (FORMER GAS AND DECONTAMINATION YARD).

PHOTO-13 LOOKING NORTHWEST ON HWY 552 ON SOUTH SIDE END OF PROPERTY (FORMER GAS AND DECONTAMINATION YARD).

APPENDIX H

NOT USED

APPENDIX I

OEW RISK ASSESSMENT CODE FORM

10 Feb 93
Previous editions obsolete

RISK ASSESSMENT PROCEDURES FOR
ORDNANCE AND EXPLOSIVE WASTE (OEW) SITES

Site Name ORLANDO AAF TOXIC GAS & DECONTAMINATION YARD
Site Location ORLANDO, FL
DERP Project # I04FL039600
Date Completed 22 JULY 93
Rater's Name THOS. R. FREEMAN
Phone No. 314-331-8785
Organization CELMS-PM-M
RAC Score 5

OEW RISK ASSESSMENT:

This risk assessment procedure was developed in accordance with MIL-STD 882B and AR 385-10. The RAC score will be used by CEHND to prioritize the remedial action at this site. The OEW risk assessment should be based upon best available information resulting from records searches, reports of Explosive Ordnance Disposal (EOD) detachment actions, and field observations, interviews, and measurements. This information is used to assess the risk involved based upon the potential OEW hazards identified at the site. The risk assessment is composed of two factors, **hazard severity and hazard probability.** Personnel involved in visits to potential OEW sites should view the CEHND videotape entitled "A Life Threatening Encounter: OEW."

Part I. Hazard Severity. Hazard severity categories are defined to provide a qualitative measure of the worst credible mishap resulting from personnel exposure to various types and quantities of unexploded ordnance items.

TYPE OF ORDNANCE
(Circle all values that apply)

A. Conventional Ordnance and Ammunition	VALUE
Medium/Large Caliber (20 mm and larger)	10
Bombs, Explosive	10
Grenades, Hand and Rifle, Explosive	10
Landmines, Explosive	10
Rockets, Guided Missiles, Explosive	10
Detonators, Blasting Caps, Fuzes, Boosters, Bursters	6
Bombs, Practice (w/spotting charges)	6
Grenades, Practice (w/spotting charges)	4
Landmines, Practice (w/spotting charges)	4
Small Arms (.22 cal - .50 cal)	1
Conventional Ordnance and Ammunition (Select the largest single value)	0

What evidence do you have regarding conventional OEW? None

B. Pyrotechnics (For munitions not described above.)

	VALUE
Munition (Container) Containing White Phosphorus or other Pyrophoric Material (i.e., Spontaneously Flammable)	10
Munition Containing A Flame or Incendiary Material (i.e., Napalm, Triethlaluminum Metal Incendiaries)	6
Flares,Signals, Simulators	4
Pyrotechnics (Select the largest single value)	0

What evidence do you have regarding pyrotechnics? None

C. Bulk High Explosives (Not an integral part of conventional ordnance; uncontainerized.)

	VALUE
Primary or Initiating Explosives (Lead Styphnate, Lead Azide, Nitroglycerin, Mercury Azide, Mercury Fulminate, Tetracene, etc.)	10
Demolition Charges	10
Secondary Explosives (PETN, Compositions A, B, C, Tetryl, TNT, RDX, HMX, HBX, Black Powder, etc.)	8
Military Dynamite	6
Less Sensitive Explosives (Ammonium Nitrate, Explosive D, etc.)	3
High Explosives (Select the largest single value)	0

What evidence do you have regarding bulk explosives? None

D. Bulk Propellants (Not an integral part of rockets, guided missiles, or other conventional ordnance; uncontainerized)

	VALUE
Solid or Liquid Propellants	6
Propellants	0

What evidence do you have regarding bulk propellants? None

E. Radiological/Chemical Agent/Weapons

	VALUE
Toxic Chemical Agents (Choking, Nerve, Blood, Blister)	25
War Gas Identification Sets	20
Radiological	15
Riot Control and Miscellaneous (Vomiting, Tear, incendiary and smoke)	5

Radiological/Chemical Agent (Select the largest single value) 0

What evidence do you have of chemical/radiological OEW? None

Total Hazard Severity Value 0
(Sum of Largest Values for A through E--Maximum of 61).
Apply this value to Table 1 to determine Hazard Severity Category.

TABLE 1

HAZARD SEVERITY*

Description	Category	Value
CATASTROPHIC	I	≥21
CRITICAL	II	≥10 <21
MARGINAL	III	≥5 <10
NEGLIGIBLE	IV	≥1 <5
**NONE		(0)

*** Apply Hazard Severity Category to Table 3.**

**If Hazard Severity Value is 0, you do not need to complete Part II. Proceed to Part III and use a RAC Score of 5 to determine your appropriate action.

Part II. Hazard Probability. The probability that a hazard has been or will be created due to the presence and other rated factors of unexploded ordnance or explosive materials on a formerly used DOD site.

AREA, EXTENT, ACCESSIBILITY OF OEW HAZARD
(Circle all values that apply)

A. Locations of OEW Hazards	VALUE
On the surface	5
Within Tanks, Pipes, Vessels or Other confined locations.	4
Inside walls, ceilings, or other parts of Buildings or Structures.	3
Subsurface	2

Location (Select the single largest value) ____

What evidence do you have regarding location of OEW? _____

_____

B. Distance to nearest inhabited locations or structures likely to be at risk from OEW hazard (roads, parks, playgrounds, and buildings).

	VALUE
Less than 1250 feet	5
1250 feet to 0.5 miles	4
0.5 miles to 1.0 mile	3
1.0 mile to 2.0 miles	2
Over 2 miles	1

Distance (Select the single largest value) ____

What are the nearest inhabited structures? _____

_____

C. Numbers of buildings within a 2 mile radius measured from the OEW hazard area, not the installation boundary.

	VALUE
26 and over	5
16 to 25	4
11 to 15	3
6 to 10	2
1 to 5	1
0	0

Number of Buildings (Select the single largest value) ____

Narrative _____

D. Types of Buildings (within a 2 mile radius)

	VALUE
Educational, Child Care, Residential, Hospitals, Hotels, Commercial, Shopping Centers	5
Industrial, Warehouse, etc.	4
Agricultural, Forestry, etc.	3
Detention, Correctional	2
No Buildings	0

Types of Buildings (Select the largest single value) ____

Describe types of buildings in the area. _____

E. Accessibility to site refers to access by humans to ordnance and explosive wastes. Use the following guidance:

BARRIER	VALUE
No barrier or security system	5
Barrier is incomplete (e.g., in disrepair or does not completely surround the site). Barrier is intended to deny egress from the site, as for a barbed wire fence for grazing.	4
A barrier, (any kind of fence in good repair) but no separate means to control entry. Barrier is intended to deny access to the site.	3
Security guard, but no barrier	2
Isolated site	1
A 24-hour surveillance system (e.g., television monitoring or surveillance by guards or facility personnel) which continuously monitors and controls entry onto the facility; or An artificial or natural barrier (e.g., a fence combined with a cliff), which completely surrounds the facility; and a means to control entry, at all times, through the gates or other entrances to the facility (e.g., an attendant, television monitors, locked entrances, or controlled roadway access to the facility).	0

Accessibility (Select the single largest value) ____

Describe the site accessibility. _____

F. Site Dynamics - This deals with site conditions that are subject to change in the future, but may be stable at the present. Examples would be excessive soil erosion by beaches or streams, increasing land development that could reduce distances from the site to inhabitated areas or otherwise increase accessability.

	VALUE
Expected	5
None Anticipated	0

Site Dynamics (Select largest value) ____

Describe the site dynamics. _____

Total Hazard Probability Value
(Sum of Largest Values for A through F--Maximum of 30) ____

Apply this value to Hazard Probability Table 2 to determine Hazard Probability Level.

TABLE 2

HAZARD PROBABILITY

Description	Level	Value
FREQUENT	A	≥27
PROBABLE	B	≥21 <27
OCCASIONAL	C	≥15 <21
REMOTE	D	≥ 8 <15
IMPROBABLE	E	<8

*** Apply Hazard Probability Level to Table 3.**

Part III. Risk Assessment. The risk assessment value for this site is determined using the following Table 3. Enter with the results of the hazard probability and hazard severity values.

TABLE 3

Probability Level		FREQUENT A	PROBABLE B	OCCASIONAL C	REMOTE D	IMPROBABLE E
Severity Category:						
CATASTROPHIC	I	1	1	2	3	4
CRITICAL	II	1	2	3	4	5
MARGINAL	III	2	3	4	4	5
NEGLIGIBLE	IV	3	4	4	5	5

RISK ASSESSMENT CODE (RAC)

RAC 1 Imminent Hazard - Expedite INPR - Immediately call CEHND-ED-SY--commercial 205-955-4968 or DSN 645-4968.

RAC 2 High priority on completion of INPR - Recommend further action by CEHND.

RAC 3 Complete INPR - Recommend further action by CEHND.

RAC 4 Complete INPR - Recommend further action by CEHND.

(RAC 5) Recommend no further action. Submit NOFA and RAC to CEHND.

Part IV. Narrative. Summarize the documented evidence that supports this risk assessment. If no documented evidence was available, explain all the assumptions that you made.

Documents indicate that CWM were at site at one time. No indications that any CWM remain.

APPENDIX J

REPORT DISTRIBUTION LIST

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CHEMICAL WARFARE MATERIALS
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ORLANDO AAF TOXIC GAS AND DECONTAMINATION YARD

ORLANDO, FLORIDA
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APPENDIX J

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